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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/822,878	04/13/2004	Alex Cooper		3177

7590

09/27/2005

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EXAMINER

HOFFMANN, JOHN M

ART UNIT

PAPER NUMBER

1731

DATE MAILED: 09/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/822,878

Applicant(s)

COOPER ET AL.

Examiner

John Hoffmann

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) 4 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Election/Restrictions***

Applicant's election of Group I, claims 1-3 in the reply filed on 8 September 2005 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim 4 is withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 8 September 2005.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-3 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

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When examining the present application, Examiner came across US patent to Brown 5621097, which indicates (at col. 4, lines 27-36) that temperatures “around 400-600C” are “below that at which sintering occurs”. However, page 7, lines 9-11 of the present specification indicates that Applicant was able to sinter at temperatures well below those temperatures that Brown indicates as being possible.

And from personal experience, ceramic objects in Examiner’s oven in his kitchen are completely unchanged at 450 F = 232 C. This also raises the question, as to whether one of ordinary skill is enabled to transform (i.e. sinter) ceramics at the same temperature – or as low as 150 C (= 302 F) – as indicated – or even as low as applicant’s upper value of 300C (= 573 F)

The MPEP sets forth what must be considered to establish whether the enablement requirement is met.

#### **2164.01(a) Undue Experimentation Factors**

There are many factors to be considered when determining whether there is sufficient evidence to support a determination that a disclosure does not satisfy the enablement requirement and whether any necessary experimentation is “undue.” These factors include, but are not limited to:

- (A) The breadth of the claims;
- (B) The nature of the invention;
- (C) The state of the prior art;
- (D) The level of one of ordinary skill;
- (E) The level of predictability in the art;
- (F) The amount of direction provided by the inventor;
- (G) The existence of working examples; and
- (H) The quantity of experimentation needed to make or use the invention based on the content of the disclosure.

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Factor (A) : claims are interpreted in light of the specification. The only specific heat treatment mentioned is the heating to 150-300. It is clear that the claims encompass a range that does not appear enabled.

Factor (B) , the nature of the invention is not overly complex.

Factors (C) and (D), firing of ceramics has been known for hundreds of years. If one could fire/sinter ceramics at the low range asserted by the present specification, it is presumed that it would be well known and more cost effective than the traditional energy-intensive firing at red-hot temperatures. On the contrary, as indicated above, Brown et al (US Pat. 5621097) indicates one cannot sinter aluminum hydroxide or oxide even at temperatures 300-450C greater than those asserted in the present specification.

Factor (E) – the level of predictability is rather high. The decomposition of aluminum hydroxide is basic chemistry and the mechanics/kinetics of sintering are well-researched and understood.

Factors (F) and (G): there is little/no guidance as to how to perform the heat treatment disclosed in the specification. There is no working example.

Factor (H): It appears that the amount of experimentation would be enormous: It appears that no one has been able to sinter ceramics at such a low temperature, and the specification does not give any guidance as to what special techniques are necessary to get the reported sintering.

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Weighing all the above factors, it is deemed that the present invention is not enabled.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-3 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Line 3 of claim 1 (and elsewhere) has a chemical formula with a hand-written symbol therein. Examiner is not familiar with the symbol, nor it is mentioned or described in the specification. It is deemed that one of ordinary skill would not be able to understand how the symbol effects the scope of the claim.

It is unclear what the claims require. As indicated above, temperatures below 600C are insufficient for sintering, but page 7, lines 9-11 of the present specification indicates the material is sintered at temperatures as low as 150 C. One of ordinary skill would not understand what is meant encompassed by heat treating and converting – because the claims suggests something which appears to be impossible.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2 are rejected under 35 U.S.C. 102(b) as being anticipated by Heany 2278442.

The invention is disclosed at col. 1, lines 34-43; the first column of page 3, lines 40-57; the second column of page 3, lines 1-5 and 35-42. Heany clearly does what applicant does: mixing, forming blanks, heat treating/sintering – however Heany just does it at a higher temperature.

Claim 2: the second column of page 3 (lines 39 and 50 and 57) of Heany reasonably discloses creating sheets and cutting the extruded mass (i.e. the sheets).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Heany as applied to claims 1-2 above, and further in view of Hakotani 5370759.

Heany does not disclose the use of rollers as claimed. However it is conventional to calendar ceramics to make ceramic green sheets; Hakotani is evidence of such (col. 5, lines 37, and 46-50). It would have been obvious to calendar (i.e. form through two rollers) the Heany ceramic to make the sheets, depending upon what sort

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of sheet-forming equipment one has handy. It is generally not invention to use a well known apparatus/structure for it's known use.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Van Dijen, Brown, Bugosh, Kerkar, Falz, and Mohri are cited as being cumulative to Heany.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Hoffmann whose telephone number is (571) 272 1191. The examiner can normally be reached on Monday through Friday, 7:00- 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

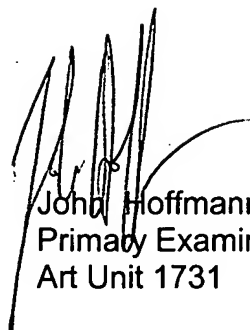
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John Hoffmann  
Primary Examiner  
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9-22-05

jmh